

Appl. No. 10/084,526
Amdt. Dated Mar. 2, 2004
Reply to Office action of November 17, 2003

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (original): A small form factor pluggable optoelectronic transceiver module comprising:

an optoelectronic subassembly for receiving and sending optical signals;

a receptacle receiving the optoelectronic subassembly and including a top surface having at least one protuberance and a bottom surface having at least two grooves;

a printed circuit board electrically contacting with the optoelectronic subassembly;

a chassis for fixing and holding the printed circuit board, a pair of depressions being defined in a rear end of the chassis;

a first housing including a top wall, a pair of forward side walls, a pair of rearward side walls, and at least one locking tab, at least one opening being defined in the top wall and engagingly receiving the at least one protuberance of the receptacle, a bottom of each forward side wall having at least one flap engaging in the grooves of the receptacle, a tab being formed at a rear end of each rearward side wall and engaging in a corresponding depression of the chassis;

a second housing fixed to the first housing by the at least one locking tab to encapsulate the printed circuit board and the chassis; and

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a shielding shell attached to the printed circuit board to prevent crosstalk.

Claim 2 (original): The module as described in claim 1, wherein the shielding shell is stamped from a single metallic plate, and includes a pair of side walls, a top cover, a rear wall and a recessed portion formed in one side wall.

Claim 3 (original): The module as described in claim 1, wherein the optoelectronic subassembly includes a laser diode and a photo diode.

Claim 4 (original): The module as described in claim 1, wherein the optoelectronic subassembly includes conductive leads soldered to the printed circuit board to establish electrical contact between the optoelectronic subassembly and the printed circuit board.

Claim 5 (original): The module as described in claim 1, wherein the at least one locking tab of the first housing includes at least one spring tongue at a center thereof.

Claim 6 (original): The module as described in claim 5, wherein the second housing includes a pair side walls, at least one opening is defined in at least one of the side walls of the second housing, and the at least one opening engagingly receives the at least one spring tongue of the at least one locking tab of the first housing.

Claim 7 (original): The module as described in claim 6, wherein the at least one protrusion is formed on at least one of the side walls of the second housing, the chassis has a pair of side walls, at least one recess is defined in at least one of the side walls of the chassis, the at least one recess receiving the at least one protrusion of the second housing.

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Claim 8 (original): The module as described in claim 1, wherein a plurality of engaging tabs extends from the side walls, rear wall and recessed portion of the shielding shell, and the engaging tabs are engaged with the printed circuit board.

Claim 9 (currently amended): The module as described in claim [[9]]8, wherein the engaging tabs are soldered to the printed circuit board.

Claim 10 (currently amended): The module as described in claim [[9]]8, wherein the engaging tabs are engaged with the printed circuit board with conductive fiber.

Claim 11 (currently amended): A small form factor pluggable optoelectronic transceiver module for receiving and transmitting optical signals, the module comprising:

- an optoelectronic transmitting device for converting the optical signals into electrical signals and transmitting the electrical signals onto an electrical interface of the module;

- an optoelectronic receiving device for receiving electrically encoded data signals and converting them into optical signals;

- a printed circuit board having a transmitting circuit and a receiving circuit thereon, the transmitting circuit electrically connecting with the optoelectronic transmitting device and the receiving circuit electrically connecting with the optoelectronic receiving device;

- a metallic housing encasing the printed circuit board; and

- at least one metallic shielding shell fixed on the printed circuit board and shielding at least one of the receiving circuit and transmitting circuit.

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Claim 12 (currently amended): The module as described in claim [[12]]11, wherein the printed circuit board includes at least one grounding circuit.

Claim 13 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell includes at least one engaging tab, the engaging tab electrically connecting with a grounding circuit of the printed circuit board.

Claim 14 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell includes at least one engaging tab, and the engaging tab is fixed to the printed circuit board.

Claim 15 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell includes at least one engaging tab soldered to the printed circuit board.

Claim 16 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell is fixed to the printed circuit board with conductive fiber.

Claim 17 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell is made of metallic material.

Claim 18 (currently amended): The module as described in claim [[12]]11, wherein the shielding shell has at least one ventilating hole defined therein.

Claim 19 (currently amended): An optoelectronic module comprising:
a receptacle with a printed circuit board on a rear side thereof;
a transceiver located in the receptacle and connected to the printed circuit board;

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a metallic shielding shell encasing transmitting/receiving circuits formed on the printed circuit board and adjacent to the receptacle;

a chassis located behind the receptacle and with means for fastening to the printed circuit board;

top and bottom metal housings enclosing all the receptacle, the chassis, the shielding shell and the printed circuit board; and

means for fastening the housings and the chassis together.

Claim 20 (original): The module as described in claim 19, wherein said shielding shell is positioned between the printed circuit board and the chassis in a vertical direction.